

**MASTER OF SCIENCE (DIETETICS AND  
FOOD SERVICE MANAGEMENT) (M.Sc. DFSM)**

**Term-End Examination**

**03152 December, 2018**

**MFN-008 : PRINCIPLES OF FOOD SCIENCE**

*Time :  $2\frac{1}{2}$  hours*

*Maximum Marks : 75*

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*Note : Question no. 1 is compulsory. Attempt five questions in all. All questions carry equal marks.*

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1. (a) Give one application for each of the following in the food industry : 5
- (i) Modified starches
  - (ii) Pectin
  - (iii) Carboxymethyl Cellulose (CMC)
  - (iv) Agar
  - (v) Gum Arabic
- (b) What is invert sugar ? Give one example.  $2\frac{1}{2}$
- (c) Mention any two areas/components which you are likely to study as part of food science and technology course. 2

- (d) List any four chemical preservatives safe for use in the food industry. 2
- (e) List any five common fermented foods used in India.  $2\frac{1}{2}$
- (f) Give the formula used to calculate the moisture content of food. 1
2. Differentiate between the following giving appropriate examples : 5+5+5
- (a) Solar drying and Freeze drying
- (b) Maillard reaction and Caramelization
- (c) Protein isolate and Protein hydrolysate
3. (a) How can the undesirable changes occurring in fried foods be minimized ?  $7\frac{1}{2}$
- (b) Briefly explain any one functional property of proteins.  $7\frac{1}{2}$
4. (a) Briefly describe the principles of food preservation. 7
- (b) Describe the methods you would use for preserving meat, fish and poultry products. 8

5. (a) "Enzymes play an important role in the baking and brewing industry." Comment on the statement using appropriate justifications. 4+4
- (b) Describe the uses of foams and emulsions in the food industry. 7
6. (a) Define product development. List the factors influencing product development. 2+5
- (b) What are functional foods ? Explain giving examples and listing the health benefits of functional foods. 3+5
7. Write short notes on any *three* of the following : 5+5+5
- (a) Properties of Colloidal Systems
- (b) Instruments Used to Assess the Texture of Various Foods
- (c) Cryogenic Freezing : Concept and Advantages
- (d) Applications of Microwave Heating
- (e) Primary Processing of Rice
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